



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/800,735

03/07/2001

Martin W. McKinnon III

10263-33243

4774

5642

7590

05/19/2005

SCIENTIFIC-ATLANTA, INC.
INTELLECTUAL PROPERTY DEPARTMENT
5030 SUGARLOAF PARKWAY
LAWRENCEVILLE, GA 30044

EXAMINER

FERRIS, DERRICK W

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,735

Applicant(s)

MCKINNON III, MARTIN

Examiner

Derrick W. Ferris

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 31-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 48 is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-16, 31-38, 41-47, 49-55 and 58-61 is/are rejected.
- 7) ☒ Claim(s) 11, 12, 39, 40, 56, 57 and 62-64 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. This Office action is in response to applicant's paper filed 12/20/04. **Claims** 1-16 and 31-64 as amended are still in consideration for this application. Applicant has amended claim 48. Applicant has canceled claims 17-30. Applicant has added claims 62-64.

2. **Claims 17-30** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species II, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 12/20/04.

3. Examiner does **not withdraw** the anticipated rejection to *Jorgensen*. The following comments fully address applicant's arguments with respect to the rejection. As to **claim 1**, applicant argues the limitation of "...*forecasting network access usage* by each user over a future time interval; prioritizing users *based on each user's forecasted network access usage* in increasing order, whereby a user with a lesser forecasted network access usage receives a higher priority than a user with a greater forecasted network access usage". *Jorgensen* teaches that an advanced reservation algorithm assigns future slots to data based on the priority of the IP data flow with which the packet is associated, see e.g., column 60, lines 17-21. In particular, the network access usage is part of the *resource reservation request* which contains a number of slots for a flow (i.e., user) and the class of a flow (e.g., the priority), see e.g., column 59, lines 49-51. As such, the base station 302 monitors the resource reservation requests thus teaching monitoring network access usage by each user during a time interval. Based on the monitoring, the base station uses the advanced algorithm to forecast network access usage in increasing order, whereby a user with a lesser forecasted network access usage receives a higher priority

Art Unit: 2663

than a user with a greater forecasted network access usage. In particular, in addition, the algorithm assigns future slots (i.e., forecasting network access usage) based on priority which includes latency where latency teaches prioritizing users based on each user's forecasted network access usage in increasing order since latency sensitive requests are handled first (i.e., whereby a user with a lesser forecasted network access usage receives a higher priority than a user with a greater forecasted network access usage). As such, the rejection is maintained. As to **claim 31**, a similar argument is made. Here charging a user a respective fee for network access usage is taught e.g., as a premium rate which is part of the SLA or class of service, see e.g., columns 11-12 and column 52, lines 25-34. As mentioned previously, the resource reservation requests take into consideration the number of slots as well as *the class of the flow* (i.e., the class of service). Thus the resource reservation, which is the network access usage, is based on the class of service which is based on the SLA where the SLA is based on e.g., cost/fees. With respect to prioritizing, future slots are reserved based on priority (i.e., class of service), jitter, or latency. As such, the packets this time are assigned based on priority which is dependent on a respective user's fee using the SLA. As such, the rejection is maintained. As to **claim 45**, see similar rejection to claim 31 where credits could be either value level or costs. As such, the rejection is maintained. Note that the newly added claims clarify forecasting in terms of a smoothing function such that *Jorgensen* does not teach a smoothing function (i.e., forecasting is used in a slightly different context than the applied reference). Hence these claims are objected to but would be considered allowable.

As to **claim 9, 37, and 54**, the base station monitors the resource reservation request which contains e.g., the number of slots requested as well as the class of service. As such, the

Art Unit: 2663

number of logical data units are the number of requests transmitted to/from the base station. As to **claim 10, 38, and 55**, data representative of the number of bytes and data packets transmitted from and to each user are the number of time slots for each request. As to **claims 11-12, 39-40, and 56-57** upon further review applicant is correct in that although this information is available with respect to maintaining SLA's, see e.g., column 11, lines 34-50, the above information is not part of the resource reservation. As such, rejection for these claims has been withdrawn. As to **claims 13, 41, and 58**, the data representative of the number of logical data units of the user that are requested to be transmitted are part of e.g., the number of slots requested for the resource reservation.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1, 4, 7, 9-16, 31, 32, 35, 37-45, 49, 52, and 54-61** are rejected under 35

U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,680,922 B1 to *Jorgensen et al.*

(“*Jorgensen*”).

As to **claim 1**, see e.g., figures 8a and 8b which show a RIMMA MAC IP flow analyzer and flow schedule used to monitor the flows of CPE devices (i.e., monitor network access usage by each user during a time interval) over a *shared* bandwidth connection in either the uplink or downlink position. As such, the analyzer and scheduler

use an “advanced reservation algorithm” which takes requests, or forecasts of access over a future time interval, prioritizes the requests, and then sorts the requests to be allocated thus teaching the further steps of prioritizing users and allocating network access available to each user. In particular, the “advanced reservation algorithm” assigns *future* slots (see e.g., column 60, line 19) from highest to lowest priority (i.e., in *decreasing* order or priority) where slots are assigned based on priority such as SLA priorities which includes network usage, credits, or fees, see e.g., column 60, line 16- column 61, line 10 (with respect to SLAs also see e.g., column 12, lines 25-40; column 49, lines 51-64; and column 52. lines 3-33).

As to **claim 4**, *Jorgensen* teaches scheduling over a shared communications link, see e.g., column 3, line 47.

As to **claim 7**, future slots are in the next frame and thus equal in length.

As to **claims 9-10 and 13**, data is collected from each user which includes data representative of the number of logical data units transmitted, the number of bytes and data packets, and the number of dropped connections as part of the QoS for the connection, see e.g., columns 11-14 which teaches monitoring errors, bytes, packets, drop-outs, and connections as part of the QoS.

As to **claims 14-16**, see e.g., column 32, lines 9-13 and column 40, lines 7-18 where a CATV network is an alternative embodiment to a wireless network.

As to **claim 31**, see similar rejection to claim 1.

As to **claim 32**, see similar rejection to claim 4.

As to **claim 35**, see similar rejection to claim 7.

Art Unit: 2663

As to **claims 37-38 and 41**, see similar rejection to claims 9-10 and 13 respectively.

As to **claim 42**, see similar rejection to claim 14.

As to **claim 43**, see similar rejection to claim 15.

As to **claim 44**, see similar rejection to claim 16.

As to **claim 45**, see similar rejection to claim 1.

As to **claim 49**, see similar rejection to claim 4.

As to **claim 52**, see similar rejection to claim 7.

As to **claims 54-55 and 58**, see similar rejection to claims 9-10 and 13 respectively.

As to **claim 59**, see similar rejection to claim 14.

As to **claim 60**, see similar rejection to claim 15.

As to **claim 61**, see similar rejection to claim 16.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 5-6, 8, 33, 34, 36, 50, 51 and 53** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,680,922 B1 to *Jorgensen et al.* ("*Jorgensen*").

As to **claims 5-6, 8**, *Jorgensen* does not mention specific time interval ranges such as time intervals from one minute to fifteen minutes, fifteen minutes to sixty

Art Unit: 2663

minutes, and one minute to sixty minutes. Examiner purposes to modify *Jorgensen* to include these ranges. In particular, examiner notes that it would have been obvious to one skilled in the prior to applicant's invention to include the above-mentioned ranges.

In particular, one skilled in the art would be motivated to monitor the network for as long as possible in order to obtain more accurate results such as up to sixty minutes.

Jorgensen provides a motivation on a smaller time scale which can be scaled up as part of a design decision in relation to figure 14 and column 60, lines 16-50. Specifically, an interval is measured for QoS which depends on the length of a packet flow which spans for a measurable amount of time where such a measurable amount of time (e.g., due to latency) could last up to sixty minutes.

As to **claim 33**, see similar rejection to claim 5.

As to **claim 34**, see similar rejection to claim 6.

As to **claim 36**, see similar rejection to claim 8.

As to **claim 50**, see similar rejection to claim 5.

As to **claim 51**, see similar rejection to claim 6.

As to **claim 53**, see similar rejection to claim 8.

8. **Claims 2-3, 46 and 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,680,922 B1 to *Jorgensen et al.* ("*Jorgensen*") in view of U.S. Patent No. 6,680,922 B1 to *Hanko et al.* ("*Hanko*").

As to **claims 2-3**, *Jorgensen* is silent or deficient to the further limitation of allocating a surplus network access where such allocation is either equal among the users or proportional to the user's forecasted network access usage.

Art Unit: 2663

Hanko teaches the above-limitation as step 506 in figure 6 where the bandwidth can also be allocated based on priority as taught e.g., at column 13, lines 20-35. Thus examiner purposes to modify *Jorgensen* to include an additional step such as step 506 where excess or surplus bandwidth is allocated to subscribers. Thus examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the further above-mentioned limitation. In particular, one skilled in the art would be motivated to perform the additional step so that bandwidth is not wasted during allocation. As such, one would be motivated to use a similar step as taught by *Jorgensen* in allocating bandwidth since such a step teaches the above-mentioned motivation.

As to **claim 46**, see similar rejection to claim 2.

As to **claim 47**, see similar rejection to claim 3.

Allowable Subject Matter

9. **Claim 48** is allowable.

10. **Claims 11-12, 39-40, 56-57 and 62-64** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2663

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

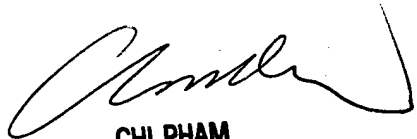
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick W. Ferris
Examiner
Art Unit 2663


DWF


CHI PHAM
SUPERVISORY PATENT EXAMINEE
TECHNOLOGY CENTER 2800 5/12/05